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Abdominal Physical Signs and Medical Eponyms: Part III. Physical Examination of Palpation, 1926-1976

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Background: This paper describes medical eponyms associated with abdominal palpation from the period 1926–1976. Despite opposition by some, eponyms are a long standing tradition and widely used in medicine. The techniques may still be useful in some cases, assisting in the selection of an appropriate and cost-effective approach to patient care. In this piece, we cover signs named in honor of physicians who contributed to medicine by developing new palpatory techniques in an attempt to better diagnose disease of the abdominal wall, umbilicus, gallbladder, pancreas, and appendix.

Data Sources: PubMed, Medline, online Internet word searches, textbooks, and references from other source texts. PubMed was searched using the Medical Subject Heading (MeSH) of the name of the eponyms and text words associated with the sign.

Conclusion: We describe brief historical background information about the physician who reported the sign, original description of the sign, and its clinical application and implication into today's medical practice.

Keywords: Palpation; Abdomen; Signs; Eponyms; History of Medicine

Palpatory maneuvers reported as eponymic signs were discovered prior to the period of advanced radiology imaging techniques. Physicians during this time period were required to perfect their physical examination skills through the sense of touch in order to identify disease. The accuracy and reproducibility of many of these signs is unknown, since they have not been studied in clinical practice. Nevertheless, the signs provide clinicians with a perspective and appreciation for the challenges physicians faced when diagnosing disease and how they developed techniques in an attempt to further refine and perfect the physical examination. During this period were signs used to distinguish diseases that affect the abdominal wall versus those that are intra-abdominal, acute and chronic appendicitis, cholecystitis, and pancreatitis. This third and final section of eponymic sign of palpation of the abdomen covers the period from 1926 to 1976. The signs are presented sequentially based on the year they were first reported.

Data Sources

PubMed, Medline, online Internet word searches, and bibliographies from source text and textbooks were used. PubMed was searched using the Medical Subject Heading (MeSH) of the name of the eponyms and text words associated with the sign.

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Table 1: Summary of abdominal physical signs of palpation (1926-1976)

Sign	Year	Description	Sensitivity	Specificity
Carnett	1926	The examiner applies deep palpation of the abdomen localizing the painful site. While keeping his/her fingers on this site, the patient is requested to contract the diaphragm by either performing a Valsava maneuver or raising and holding the head from the pillow. As the abdominal wall muscles tenses, the examiner relaxes the finger causing them to rise with the abdomen. Now with the patient's abdominal muscles tense, the examiner reapplies pressure (with or without slight twisting motion) with his/her finger tip.	1-5%	32-72%
Sister Mary Joseph	1928	Observation and palpation of the umbilicus reveals a hard and infiltrated nodule.	Unknown	Unknown
Lockwood	1932	Patient supine with head raised on a pillow and knee flexed which relaxes the superficial abdominal muscles. The examiner sitting to the right of the patient, palpates the right iliac region near McBurney's point using the three inner fingers of the left hand. A positive test is feeling "a trickle (small, fine crepitation with higher note) of flatulence" passing over the finger. The test should be repeated after at 30 seconds to one minute or longer to verify this finding.	Unknown	Unknown
Carmalt-Jones	1937	The hand rests flat on the upper abdomen. The third finger tip is brought into firm contact with the outer costal margin on the left side and moved, inch by inch inward. On the right side a single tender spot is found on the eighth rib edge (sometimes slightly higher or lower). Occasionally there is hyperalgesia of the skin over the eighth dorsal segment. A positive test is the presence of pain as observed by the patient's expression.	Unknown	Unknown
Klein	1938	Palpatory tenderness area on the right side of the abdomen which may extend above the umbilicus. Tenderness is absent on the left side. The patients is turned to the left lateral decubitus position and maintained in this position for at least 30 second. Palpation now reveals that the pain is shifted to the left side of the abdomen and absent on the right. The patient is then turned on the right lateral decubitus position, rests for a "short period" with palpation now revealing absence of tenderness on the left side and more marked tenderness on the right side. (shifting tenderness)	Unknown	Unknown
Mallet-Guy	1943	Patient is fasted and placed in the right lateral decubitus position with the legs semi-flexed on the abdomen. The tip of the fingers are placed 3 or 4 cm along the costal margin. At the 9th rib cartilage the fingers are easily inserted under the costal margin, depressing the abdominal wall, in a superior and parallel direction to the lateral-vertebral region. When the fingertip is deeply engaged raise the heel of the hand and feel in the depth. The presence of a sharp pain signifies the presence of a pancreatic lesion.	Unknown	Unknown
Ben-Asher	1943	The examiner places the tips of his/her fingers under the left costal margin in the region of the spleen. The patient is asked to take a deep breath, exhale completely, and then cough. If positive, the patient will complain of pain in the area of suspected acute appendicitis.	Unknown	Unknown
Voskresensky	1950	The examiner pulls the lower edge of the patient's shirt with his left hand and places the second through fourth fingertips of his/he right hand on the abdominal wall in the epigastrium.	Unknown	Unknown
Baid	1976	A Ryle tub is palpated over a lump in the epigastrium in thin patients with pancreatic cysts.	Unknown	Unknown

Carnett Sign

John Berton Carnett (1890-1988) was born in Williamsport, Pennsylvania. He was a professor of surgery at the University of Pennsylvania School of Medicine and a United States surgeon who served in the First World War. In April 1917, Lieutenant Colonel J.B. Carnett was appointed Director of U.S. Army Base Hospital No. 20 at the University of Pennsylvania.[1] For their exemplary work, the unit received letters from the American Red Cross at Washington and the Surgeon General, commending them for "readiness for service, patriotic devotion to duty, and excellence of professional personnel."[1] For his outstanding service, he received a letter of commendation for exceptional meritorious and conspicuous service.[1]

Carnett, in his 1926 paper "Intercostal Neuralgia as a Cause of Abdominal Pain and Tenderness", accounted for the role of the intercostal nerve as a cause for abdominal wall neuralgia, and he described a two-staged method (A and B) for differentiating between parietal tenderness and intra-abdominal (subparietal or visceral) tenderness as follows (Table 1):

> *(A) In any patient complaining of abdominal pain and tenderness, the examiner follows the classic advice of gaining the confidence of both the patient and his muscle and then palpates in the usual manner. Irrespective of whether the tenderness is parietal or intra-abdominal, the examiner's fingers, as a rule, will dip fairly deeply into the abdomen before tenderness is elicited. This deep position of the fingers has generally been regarded as proof that the tenderness is intra-abdominal, but in a surprisingly high percentage of case this assumption will prove to be an error as shown by the next step. (B) The examiner keep his fingers at the most sensitive area he has discovered on deep pressure and requests the patient to make his abdominal muscles rigid by contracting his diaphragm or by raising and holding his head from the pillow; as the patient tenses his muscles, the examiner relaxes his finger pressure so that his fingers rise out of the abdomen; and then with the patient's abdominal muscles tense the examiner reapplies pressure with his finger tips and he also may exert a little twisting motion with them.*[2] *(p 625; emphasis added)*

In describing his finding in a subsequent paper on "Pain and Tenderness of the Abdominal Wall", he wrote (Table 2):

> *Parietal tenderness and, inferentially, pain are demonstrated best by making firm palpation while the patient balloons out the abdomen and holds the abdominal muscles as tense as possible. Any tenderness thereby disclosed is necessarily parietal in location, because the tense muscle prevents the examiner's fingers coming in contact with the viscera. This is a simple bedside test, requiring no special instruments; it can be carried out in less than two minutes and will give invaluable diagnostic information if it is employed, as it should be, on every patient having abdominal pain or tenderness.*[3] *(p. 345; emphasis added)*

Table 2: Significance of a positive diagnostic palpatory maneuvers

Sign	Interpretation
Carnett	Differentiate Intrabdominal (visceral) from abdominal wall (parietal) cause of pain.
Sister Mary Joseph	Presence of a probable intrabdominal sources of metastases.
Lockwood	Presence of either a chronic appendicitis or adjacent adhesion.
Carmalt-Jones	Detection of cholocystitis.
Klein	Differentiate non-specific mesenteric adenitis from acute appendicitis.
Mallet-Guy	Detect pancreatic lesion(s) in patients with chronic pancreatitis.
Ben-Asher	Detection of site of suspected appendicitis.

Carnett's maneuver has been described in more current literature by asking the patient lying in the supine position to raise his head and legs at the same time or by lifting the head and shoulders off the examining table.[4] Another description, by Bailey (1949) was, "The patient is asked to extend both legs, while keeping his knees stiff, to raise his feet from the bed."[5 (p. 204)]

According to Carnett (1926), if the cause of the abdominal pain is due to intrabdominal pathology, then only the B stage of the test "will fail to elicit any tenderness when strenuous pressure is applied over the tense muscle."[2 (p. 625; emphasis added)] However, if the cause of the abdominal pain is due to parietal tenderness, then "not as much tenderness will be elicited by the B test as by the A test."[2 (p. 625; emphasis added)] (Table 3). The pathogenesis is believed to be due to irritation of the cutaneous nerve root or myofascial bundle by the inflammatory process resulting in pain. A positive test might indicate the presence of abdominal hernias, nerve entrapment syndrome, rib-tip syndrome, trigger points, localized endometriosis, and rectus sheath hematomas.[4] Carnett cautioned that the B test may be positive in cases of peritonitis or local abscess that involve the anterior parietal peritoneum or muscles or in cases where patients, particularly multiparous women, are unable to tense their muscles[2 (p. 628)] (Table 3). Thomson and Francis analyzed 120 admissions for acute abdominal pain. They found that 24 out of 120 patients had positive Carnett's test, and 23 of these patients had a normal laparotomy.[6] Other studies have demonstrated the usefulness of Carnett's sign in assessing the underlying cause of abdominal pain.[6-8] However, in a larger series of patients, a positive abdominal wall tenderness test only had a sensitivity of 1% to 5% and specificity of 32% to 72%, with a positive likelihood ratio of 0.1.[9]

Sister Mary Joseph Sign

Julia Dempsey (1856-1939) was born in Salamanca, New York in 1878,[10,11] entered the Third Order Regular of St. Francis of the Congregation of Our Lady of Lourdes in Rochester, New York in 1878, and as was customary, received

Table 3: Interpretation of Carnett Sign

Source of Pain	Pain Present
Intrabdominal (visceral)	Relaxation of abdominal muscles
Abdominal wall (parietal)	Tensing abdominal muscles
Intrabdominal (visceral) and abdominal wall (parietal)*	Relaxation and tensing abdominal muscles

* Pain due to peritonitis or local abscess involving anterior parietal peritoneum or muscles or in multiparous women unable to tense their muscles.

the name Sister Mary Joseph. In 1889, she was a nursing student at Saint Mary's Hospital in Rochester, Minnesota and shortly became head nurse. She was the first surgical assistant to Dr. William James Mayo from 1890 to 1915 and nursing superintendent beginning in 1892, playing an important role teaching and supervising the nursing services at St. Mary's Hospital.[10] She observed the presence of a palpable cutaneous nodule in the umbilical area in patients diagnosed with abdominal malignancy while preparing the abdomen prior to surgery. She reported her clinical observations to Dr. William James Mayo who described this finding in the *Proceedings of the Staff Meeting of the Mayo Clinic* in 1928 (Table 1): "*The 'pants-button' umbilicus does not seem to be so well known. In many doubtful cases, examination and palpation of the umbilicus will reveal that it is hard and infiltrated, perhaps not prominently*."[12 (emphasis added)] It was Dr. Hamilton Bailey, a British surgeon, who named this sign in recognition of Sister Joseph in his textbook *Demonstration of Physical Sign in Clinical Surgery* (1949) when he wrote: "*In advanced intra-abdominal carcinoma, a neoplastic nodule can sometime be seen or felt at the umbilicus. This is known as Sister Joseph's nodule*."[5 (p. 327; emphasis added)] (Table 2). Interestingly, it was in fact, Walter Hayle Walshe who first reported the presence of umbilical metastases in 1846 in his book *The Nature and Treatment of Cancer* when he wrote:

> *Professor Hermann of Strasburg perished, thus according to Lobstein: an enormous tumor had originated in the pelvis, and in the course of six months extended to the umbilicus, without causing pain or any notable symptom; the patient attended to scientific pursuits to the day of his death.*[13 (pp. 311-312; emphasis added)]

In 1909, in his book *A Handbook of Medical Diagnosis for the Use of Practioners and Students,* Wilson wrote*, "Enlargement of the retroperitoneal glands, usually sarcomatous-Lobstein's cancer-may cause a visible tumor in the epigastric or umbilical region, usually tense, immovable, and nodular; sometimes slightly movable and obscurely fluctuating…"* [14 (p. 85emphasis added)]

The sign is characteristically associated with adenocarcinoma, mainly gastric, ovarian, colonic, or pancreatic cancer.[15] Rare association has been noted with urinary and intrathoracic malignancy. Direct hematogenous or transperitoneal spread through lymphatics or remnant embryological structures has been postulated to be underlying pathogenesis. While Sister Mary Joseph nodule is not commonly seen today due to early diagnosis, its presence often signifies a poor prognosis due to metastatic disease.[16]

Lockwood Sign

Charles Barrett Lockwood (1856-1914) was born at Stockton-On-Tees, England. In 1878 he was House Surgeon to the Dean Street Lock Hospital, Assistant Resident Anaesthetist in 1879, and in 1880 House Surgeon to Alfred Willett.[17] In 1881, he was elected Fellow of the Royal Colleges of Surgeons (FRCS). From 1882 to1899 he was appointed Surgeon to the Great Northern Central Hospital, elected in 1892 as Assistant-Surgeon to St. Bartholomew's Hospital and from 1903 to 1912 as Consulting Surgeon, retiring from active hospital practice in 1912. From 1886 to 1889 he was Hunterian Professor of Comparative Anatomy and Physiology,[18] and from 1894 to 1895 was Hunterian Professor of the Royal College of Surgeons of England, and was elected a member of the Council of the College in 1908.

Lockwood founded the Anatomical Society of British Anatomists on May 6, 1887, serving as President in 1902 and as President of the Medical Society of London and the Harveian Society of London. He had a strong interest in morphological anatomy and its practical application to surgery.[19] The focus of his research was in the area of bacteriology and asepsis, publishing a book entitled Aseptic Surgery.[20]

His work as a surgeon was characterized as one who:

> had brilliant wit and striking surgical technique […] His power of observation were so keen that no malinger ever escaped undetected. No point in the history of the case was considered too trivial, and no clinical fact was eliminated except after the most scrupulous scientific and pathological investigation.[21]

According to G.H. Colt (1932), C.B. Lockwood taught the maneuver as follows:

> *The patient lies on his back with his head raised on a pillow and his knees drawn up, so that the superficial abdominal muscles are relaxed. The surgeon sits down near his right side and palpates the right iliac region near McBurney's spot with the three inner fingers of his left hand. If he feels a trickle of flatulence passing his fingers, and if this can be often repeated after waiting a half to one minute or a little longer, the patient has either a chronically inflamed appendix or adhesions near it. […] The trickle of flatulence was expressly stated not to be the large gurgle of gas collected in the caecum, but a small, fine crepitation with a higher note.*[22 (emphasis added)]

Colt reported his experience with the sign, finding:

> *During the last ten years I have tested this sign in over 600 cases verified by operation, it has, in fact, been the determining sign. It has been positive in every case but one. Two positives have been noted in cases which*

were not appendicular, but these had calcified glands in the ileocolic angle. Negatively the sign is of constant value in excluding appendicular adhesions or the appendix which is apparently normal on section. When the appendicular trouble is lying towards the pelvis the sign is felt lower down and nearer the middle line.[22] *(emphasis added)*

We are unaware of any study that evaluated the sensitivity or specificity of this sign.

Carmalt-Jones Sign

Dudley William Carmalt-Jones (1874-1957) was born in London, received the Bachelor of Medicine degree in Human Anatomy and Human Physiology in 1900, and graduated in medicine from St. Mary's Hospital in London in 1903.[23,24] At Seamen's Hospital in Greenwich and Westminster Hospital, he held junior appointments while serving as an assistant in Sir Almroth Wright's vaccine laboratory in the Department of Therapeutic Inoculation.[25] He received his Doctor of Medicine (DM) degree from Oxford in 1911, and in 1912 he was appointed dean of the Westminster Hospital Medical School. In 1911, he published his book entitled *An Introduction to Therapeutic Inoculation*. He was elected Fellow of the Royal College of Physicians (FRCP) of London in 1914,[26] and in 1919 he was appointed distinguished Mary Glendining Professor Systematic Medicine at the Otago University, New Zealand, retiring from this position in 1939.[25,27]

Among his other accomplishments, he was President of the British Medical Association, New Zealand branch, and Foundation Fellow of the Royal Australasian College of Physicians in 1938, serving as a member of the first council and vice-president for 2 years until 1940.[24] He has been described as a poet, writer, and scholar, and published among others, *The Annals of the University of Otago Medical School*, Wellington 1875-1939 in 1945 that contained the history of medicine in New Zealand.[28,29] Dr. Carmalt-Jones (1937) described the method for detecting cholecystitis:

The sign is sought for with the hand flat on the upper abdomen; the third finger-tip is brought into firm contact with the costal margin, inch by inch along its whole length from without inwards, beginning on the left side, saying nothing and watching the patient's face. (...) Occasionally in cases of gastric ulcer there is a similar but slighter area of tenderness on the left rib margin, but it is inconstant. On the right, in cases of cholecystitis, a single tender spot, indicated by the patient's expression, is found, generally on the eighth rib edge, sometimes a little higher or lower, and just covered by the finger-tip. Occasionally, but by no means always, the skin of the whole eight dorsal segment on the same side is hyperalgesic to pin-prick.[30 (p. 615; emphasis added)]

Carmalt-Jones recognized that the sign "*[i]s not invariably present; it is not a sine qua non of cholecystitis*"[30 (p. 615; emphasis added)] He postulated that that tenderness over the eighth rib edge and hyperalgesia in the area is caused by spasm of the sphincter of Oddi. We are unaware of any studies that have evaluated the sensitivity or specificity of this sign.

Klein Sign

Little historical information was identified about Dr. William Klein (1881-1970). He worked as a surgeon in the Department of Surgery of the Morrisania City Hospital, Bronx and in the Bronx Hospital in New York City.[31] This sign, sometimes referred to as Alder's sign, was originally described to differentiate non-specific mesenteric adenitis from acute appendicitis and other diseases of the cecum. In his description published in the *Archives of Surgery* in 1938 Klein wrote:

The tender area may extend even above the umbilicus on the right side. The left side at the time is free from tenderness. The patient is then turned on the left side and allowed to remain in this position for thirty seconds or more. Palpation in this position finds the tender area previously noted on the right side now shifted to the left of the umbilicus and absent on the right side. The patient is turned on the right side and allowed to rest for a short period, and palpation then reveals absence of tenderness on the left side and more marked tenderness on the right.[31 (pp. 578-579; emphasis added)]

The pathophysiology of this finding is based on the concept of shifting of abdominal contents. The cecum and appendix, unlike the small intestines and mesentery, are anatomically fixed structures, have little mobility, and thus do not move with changes in body position. According to Klein (1938) in his description of the pathogenesis:

This shifting tenderness is easily explained if one remembers the anatomic outline of the mesentery. When the patient is turned on either side the mesentery and small intestines will gravitate to the extreme dependent part of the abdomen. The cecum and appendix have little mobility and cannot be shifted to the left with a change of the body position. This one sign when present, has always differentiated mesenteric adenitis from acute appendicitis.[31 (p. 579; emphasis added)]

Posner described Klein's sign in his publication "Isolierte Inkarzeration der Appendix" (Isolated Incarceration of the Appendix) to diagnose a femoral hernia containing the appendix. In this context Klein's sign was the finding of a mechanical irritation of the hernia causing it to become erect.[32] We are unaware of any study which evaluated the sensitivity or specific of this sign.

Mallet-Guy Sign

Pierre Albert Mallet-Guy (1897-1995) was born in Beaune, France, received his medical training at the hospital of Lyon in 1921 and a Doctorate in Medicine in 1925. In 1946, he was appointed Professor of Surgical Pathology.[33] From 1958 to 1970 he served as Professor of the Surgical Clinic A at the University of Lyon and as Director of the Surgical Research Unit of the National Institute of Health and Medical Research of the Edouard Herriot Hospital, Lyon.[33] He received honorary

doctorate degree (DHC) from the University of Giessen. From 1948 to 1966 he was appointed as a Mission Officer by the General Directorate of Cultural Affairs in a number of countries including the United States, and he was annotated an honorary foreign member for his distinguished service on November 20, 1975.[33] He was recognized for his valor by being decorated with a Croix de Guerre (Military Cross).

He was a member of the Academy of Medicine and Surgery, the International Academy of Pathology, and the American College of Surgeons, among others, and he served on the Board of Directors of the French Association of Surgery.[33] He also served on a number of editorial boards and was Editor-in-Chief of *Lyon Chriurgical*.[36] He described, in 1943, a maneuver used to detect a painful point in chronic pancreatitis:

> *The patient who is fasting preferably is placed in the right lateral decubitus, with the legs semi-flexed on the abdomen. The tip of the fingers applied 3 or 4 cm along the chondral margin, at the 9th cartilage, and easily inserted under the costal arch by depressing the anterior abdominal wall in the direction of the lateral-vertebral region. The pancreas then allows itself to be directly explored, and at a precise point palpation reveals a sharp pain which the patient identifies with that which marked the evolution of the affection.*[34 (p. 175; emphasis added)]

He further clarified precisely the location and direction of the fingers:

> *Engagement of the fingers extended, beneath the costal margin, in a superior and parallel directions to the cutaneous plane; when the fingertip is thus deeply engaged under the diaphragm, raise the heel of the hand and then only feel in the depth. The pancreas is under the finger which examines it, the stomach having been reclined by this maneuver downward and inward.*[34 (p. 175; emphasis added)]

Pierre Mallet-Guy (1943) reported his experience with this sign:

> *This is the signature of the pancreatic lesion, and my personal experience of 34 patients suffering from verified lesions of chronic pancreatitis (of which 23 localized or diffused on the left) allows me to see this sign and defined, the safest element and the major argument of a still hesitant diagnosis.*[34 (pp. 174-175; emphasis added)]

He requested the need for further evaluation of this symptoms and its ability to distinguish between other conditions in this region:

> *I should like to see the systematic investigation of this symptom; it is, however, always present in the left lesions of the gland, which it is most often possible to identify the causes of error represented by the renal affections, the peptic ulcer post-operative, thrombosis of the splenic vein (...) having characters sufficiently clear not to lend to discussion.*[34 (pp. 175-176; emphasis added)]

We are unaware of any study that validated this sign.

Ben-Asher's Sign

Solomon Ben-Asher (1894-1949) was born in Russia and immigrated to the United States during childhood, residing in New Jersey. In 1923, he graduated from the University and Bellevue Hospital Medical College. He served in the Department of Cardiology at Bellevue Hospital, New York City, and as a visiting physician at Greenville Hospital in Jersey City. Among his other accolades included being a member of the International and American Gastroenterological Associations, Associate Fellows of the American College of Physicians, and Fellow of the American College of Chest Physicians.[35]

Dr. Ben-Asher (1943) reported about and explains the use and performance of the cough sign:

> *For many years, I have utilized the cough sign in the examination of acute abdominal cases, and have found it of great value in the differential diagnosis, an almost pathognomonic of acute appendicitis. In eliciting the sign the examiner places the tips of his fingers under the left costal margin in the region of the spleen. The patient is then asked to take a deep breath, exhale completely, and then cough. When positive, the patient will point to the area of the suspected appendix as the site of severe pain.* [36(p. 369; emphasis added)]

In a cohort of 400 patients admitted to Greenville Hospital for acute abdominal diseases between 1938 and 1942, 198 cases of uncomplicated appendicitis and 202 case of non-appendicial disease were identified. The cough sign was found in 71% of cases with acute appendicitis compared to 24% of non-appendicial group.[36] Interestingly, although the method and location for testing rebound tenderness was not explained, Dr. Ben-Asher found its occurrence in 82% of patients with acute appendicitis and 71% of those with non-appendicial disease.[36] This sign is said to be particularly useful in distinguishing cases of acute appendicitis and right ureter calculi.

Voskresensky Sign

Vladimir Mikhailovich Voskresensky (1902-1951) was born in Brod, Staritsa County, Tver Province, Russia and received his medical training beginning at the Military Medical Academy in Petrograd beginning in 1920, transferring and graduating in 1926 from the State Institute of Medical Knowledge.[37] In 1926, he was head of the Obstetric Department in Vushny Volochok Hospital.[40] From 1933 to 1941 he was assistant to the Clinic NN Samarin at the Institute for Advanced Medical Education in Leningrad, and from 1934 to 1935 he was head of the Surgical Department of the City Hospital in Murmansk.[37] From 1941 to 1948 he served the Soviet Army in various positions in the surgical institution of the Leningrad Front, including Senior and Chief Surgeon. From 1948 to 1949 he was head of the Department of Faculty Surgery of the Tomsk Medical Institute, and in 1949 was head of the Department of Surgery of the Novosibirsk Institute of Advanced Physicians.[37] For his efforts during the war, he was awarded the Order of the

Patriotic War I and II degrees, Order of the Red Star and 6 Medals, and the Polish Order "Cross of the Brave."[37]

He described a sliding or shirt sign in 1950:

> *The test is performed by the examiner pulling the lower edge of a patient's shirt with his left hand and places the second through fourth fingertips of his/her right hand on the abdominal wall in the epigastrium. The examiner exerts downward pressure on the abdomen while moving or sliding his hand towards the right lower quadrant and stopping in this region. A positive sign is if the patient reports increasing pain in this region.*[38] *(emphasis added)*

In a study of 19,346 patients, Voskresensky sign was found in 36.8% of patients with uncomplicated and 33.55% with gangrenous acute appendicitis.[29] Other than of historical interest, the sign lacks sufficient sensitivity or specificity to be clinically useful.

Baid sign

Jai Chand Baid, MD, MS SUR (GP), is Professor and Head, Department of Surgery at J.L.N. Medical College in India. In 2003, he was appointed president of the Association of Surgeons of India (ASI) Rajasthan Chapter and member of the Governing Council ASI, Ajmer. He also served as Vice-President of the Association of Colon and Rectal Surgeons of India (ACSRI) and was a Member of the International Society of Coloproctology. He is an Honorary Fellow of the Association of Colon and Rectal Surgeons of India.[40] He currently serves as Ex HOD, Panel Consultant at Mittal Hospital and Research Centre in General Surgery. Baid (1976) reported a physical sign of a pancreatic pseudocyst confirmed when:

> *A Ryle tube is palpated over a lump in the epigastrium in thin patients suffering from pancreatic cyst because it provides the counter force to the palpating hand, and as the cyst enlarges and becomes tense it pushes the stomach forward. This results in obliteration of the gastric lumen and the space between the stomach and the parietes.*[41] *(emphasis added)*

The Ryle tub is palpable through the abdominal wall after gastric suction, because the enlarged fixed pancreatic cyst provides the counterforce when pressure is applied over the epigastrium. He reported that this test is particularly helpful in patients with a thin abdominal wall if the cyst is behind the stomach.[41] This finding may be limited in patients with a thick abdominal wall that prevents the ability to palpate the tube. We are unaware of any studies that have evaluated the validity of this sign. Because of more advanced techniques to view pancreatic pseudocysts, this sign is no longer clinically useful.

Conclusion

Limited evidence is available regarding the accuracy of these signs recorded as medical eponyms in diagnosing disease. It is unknown why the applications of many of these palpatory signs were not studied in medical practice. Some of these sign, such as Baid, are antiquated and are only of historic interest. We contend that these signs are important to understand and learn during training, as they provide a unique perspective of the art of palpation or laying one's hands on the patient.

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